KNN/Regularization (Q8L9) Total Questions: 21

Most Correct Answers: **#13** Least Correct Answers: **#15**

1. **The bias of an estimator (e.g. z^) equals...Hint: the OLS coefficients are unbias :)**

5/9 (A) E(z^) - z

1/9 (B) E(z^2) - [E(z)]^2

2/9 (C) [E(z^2) - E(z)]^2

0/9 (D) E(z^2)

0/9 (E) I do not know

2. **The main idea of regularization is**

4/9 (A) To introduce a small amount of bias in order to have less variance.

2/9 (B) To introduce a small amount of variance in order to have less bias.

2/9 (C) To introduce a small amount of variance and bias in order to have less bias.

0/9 (D) I do not know

3. **How the tune of any parametr can be made**

4/9 (A) using Cross validation

0/9 (B) It is impossible

0/9 (C) I do not now

3/9 (D) using larger sample

1/9 (E) only having population

4. **The ridge coefficient estimates shrink towards zero**

3/9 (A) when lambda increases

4/9 (B) when lambda decreases

1/9 (C) when lambda = 0

0/9 (D) I do not know

5. Which one can shrink the slope all the way to 0?

4/9 A Lasso

4/9 B Ridge

0/9 C Regression

0/9 D I do not know

6. When lambda = 0, we have

2/9 A Ridge

4/9 B Lasso

0/9 C EL

2/9 D Regression

0/9 E I do not know

7. When alpha = 0, we have

1/9 A Ridge

7/9 B Lasso

0/9 C EL

0/9 D Regression

0/9 E I do not know

8. Which function can help to perform cross-validation for regularization in R?

5/9 A cv.glmnet()

0/9 B cros_val()

3/9 C glmnet(method = "cv)

1/9 D I do not know

9. KNN is

4/9 A Data-driven

2/9 B Model-driven

2/9 C I do not now

10. KNN is

1/9 A parametric method

5/9 B non-parametric method

2/9 C I do not know

11. The dependent variable of the (OLS) regression is

1/9 A categorical

0/9 B ordinal

5/9 C continuous

2/9 D count

1/9 E I do not know

12. The dependent variable of the classification is

5/9 A categorical

2/9 B numeric

1/9 C I do not know

13. How to chose K?

0/9 A pick own

7/9 B using cross-validation

1/9 C the largest one

1/9 D the smallest one

14. KNN can be used for regression

4/9 A Yes

1/9 B No

3/9 C I do not know

15. In the case of KNN classification we use

4/9 A average of outcomes

1/9 B majority voting scheme

3/9 C I do not know

16. Which of these errors will increase constantly by increasing k?

5/9 A train error

2/9 B test error

0/9 C both

1/9 D I do not know

17. This function can be used to perform KNN in R

2/9 A knn()

1/9 B k_nn()

1/9 C knnreg()

1/9 D knearneib()

3/9 E I do not know

18. With the increase of k, the decision boundary will be

2/9 A simplified

0/9 B more complex

4/9 C I do not know

2/9 D unchanged

19. The best k correspond to

5/9 A the lowest point of test error

1/9 B the lowest point of train error

0/9 C the highest point of test error

2/9 D I do not know

20. KNN algorithm is sensitive to outliers

3/9 A True

3/9 B False

2/9 C I do not know

21. KNN

5/9 A is a supervised learning algorithm.

2/9 B is an unsupervised learning algorithm.

1/9 C I do not know